

ASSESSMENT OF NEED FOR ELDERLY IN COMMUNITY IN HANG DONG DISTRICT, CHIANG MAI PROVINCE, THAILAND USING CAMBERWELL ASSESSMENT OF NEED FOR THE ELDERLY QUESTIONNAIRE (CANE)

Piyanuch Tiativiriyakul, Peter Xenos*

College of Public Health Sciences, Chulalongkorn University, Bangkok, 10330, Thailand

ABSTRACT:

Background: The population ageing is an inevitable demographic change occurring in many countries including Thailand. Therefore, the actual need of the elderly should be evaluated properly in order to manage the continuing growth of the ageing society. This study aimed to identify the needs and the sufficiency of support for elderlies using Camberwell Assessment of Need for the Elderly questionnaire (CANE) and determine the relationship between socio-demographic characteristics, living status and health status and needs of the elderly in community in Chiang Mai Province, Thailand

Method: The study design is a cross-sectional quantitative study. The CANE questionnaire was translated to Thai; and the validity and reliability test were performed. The translated version of questionnaire was reviewed by three experts. The IOC score of the questionnaire was 0.76. The reliability was test in 30 elderly samples. The Cronbach's Alpha coefficient was 0.82. The data collection was performed by interviewing the participants using questionnaires as the guideline. The chi-square analysis was used to explore the association between and sociodemographic, living status and health status and need identification. The regression analysis was performed to evaluate association between independent factors and the number (level) of need, met need and unmet need

Results: Among 330 participants who aged 60 years old or above, 66.4% of them had at least one and 22.7% had at least one unmet need. The average need score of the sample was 3.09 out of 24 topics (SD= 3.33) which 0.4 was unmet need (SD=1.05). The areas which had high percentage of need were physical health, eyesight/hearing/communication and memory respectively, while the area with the high percentage of unmet need (per total need) were the self-care, caring for other, benefit and accommodation. The age, number of disease and type of insurance had significant association with the number of total needs whereas, the monthly income and living environment had relationship with the unmet need determination (p -value < 0.05).

Conclusions: Although the most frequent identified need was in physical area, the highest proportion of unmet need was found in function category. Even age, number of disease and type of insurance had association with the number of total needs, the monthly income and living environment were the factors determining the unmet need. Therefore, the more attention should be paid on needs in function area and the support for the cost of living and living environment.

Keywords: Elderly; Care for elderly; Camberwell Assessment of Need for the Elderly Questionnaire (CANE); Thailand

DOI:

Received: June 2017; Accepted: September 2017

INTRODUCTION

Due to the fast-continuous growth of the aging society around the world [1], the real need of the

* Correspondence to: Peter Xenos
E-mail: Xenosp@gmail.com

Cite this article as:

Tiativiriyakul P, Xenos P. Assessment of need for elderly in community in Hang Dong district, Chiang Mai province, Thailand using Camberwell Assessment of Need for the Elderly questionnaire (CANE). *J Health Res.* 2017; 31(Suppl.2): S143-54. DOI:

elderly is crucial for providing the accurate care and management. The growth in the numbers and proportions of elderly have far impact reaching economic, social and need political implications. The trend of dependency ratio which is the ratio of people who more than 60 years old divide by the working population (age 15-60 years old) has increased gradually from 10.7% in 1994 to 18.1% and 22.3% in 2011 and 2014 respectively [2]. The dependency ratio is a numerical measure of the economic burden imposed on the working population who have to ultimately take care people who are not in the labour force. Nowadays, some developing countries consider this issue as a country topic and try to find the cost-effective ways of using their limited resources to meet the needs of older people [3]. Moreover, given the diversity of life histories and physical/mental conditions of the elderly, the goals/needs vary by each individual [4], and thus accurate and comprehensive assessment of the individual needs of the elderly is a challenge for frontline care providers and policy management by the government [5].

In Thailand, there are also the Act on Older Persons; Thailand 2003 which has been in force since 1 January 2004 to ensure welfare to cover many aspects for the elderly [6]. Even, there are a lot of activities and supports for the elderly in Thailand, and some studies have been conducted for assessment, there are still no formal study demonstrates of fulfillment/ or satisfaction for all aspect of needs in the elderly in Thailand. Moreover, the research to assess the basic need of the older and expand to all aspects is limited.

The Camberwell Assessment of Need for the Elderly questionnaire (CANE) can evaluate the needs and the sufficient of support of the need as individual [7] and also can evaluate the support from the formal (government related agencies) and informal source of support (relative, family, friend and neighbor). Moreover, it is the comprehensive measurement designed to evaluate the broad range of needs of the elderly. Even it was developed especially for patient with mental health problems. However, it was intended in all setting ranging from primary care, out-patients, psychiatric ward, nursing and residential home [8]. This research aimed to identify and evaluate the met-needs and un-met needs of the elderly which is one of the interesting topic. It can lead to the better understanding of the need in elderly, and hence benefit for further facility or service development for the older population.

MATERIALS AND METHODS

Design and study sample

This study is a cross-sectional descriptive study. The study included Thai individuals who age 60 or above, living in Hang Dong district for more than 3 months and no communication problem. The 330 participants sample size was calculated by using the following formula;

$$n = \frac{z_{\alpha/2}^2 \sigma^2}{d^2} \times design\ effect$$

The average SD of the mean of total unmet need accessed by the community-dwelling elderly from the literature review which is 1.01, the 0.15 as absolute error, type 1 error at 5% and design effect at 1.7 were used for the calculation [9, 10].

The five sub-districts (San Phak Wan sub-district, Hang Dong sub-district, Num Prae sub-district, Nong Kwai sub-district and Sob Mae Kha sub-district) were simple random sampling from 11 sub-districts. Then participants were simple randomized from the list of elderlies from the district municipality office. The face to face interview by trained interviewers using the structural questionnaire method was used for data collection.

Measurement

Please state the operational definition of the term 'need for elderly in community'

The original English version of CANE was translated to Thai language by the Chulalongkorn University Language Institute. Then it was verified by researcher and team for the completeness and appropriateness of the language. The content validity was reviewed by 3 experts, the first expert from Geriatric Medicine Center of Medical Excellent Center, Faculty of Medicine, Chiang Mai University, the second expert from the Preventive and Social Medicine, Chulalongkong University and the third expert from the Faculty of Public Health, Mahidol University. The IOC (Index of Consistency) score of this questionnaire is 0.76. Then the reliability of this Thai version was tested in 30 elders in Hang Dong district, Chiang Mai province, Thailand. The Cronbach's Alpha coefficient is of the questionnaire is 0.82.

The socio-demographic characteristics included age, sex, education, income and marital status were collected as the background independent variables. In addition, the living status and health status were also evaluated. Then, the self-perceived needs were

Table 1 The characteristics of the 330 older adults participating in this study

General data	Number	Percentage
Socio-demographic data		
Gender		
Male	132	40.00
Female	198	60.00
Age (years)		
60-69.9	203	61.50
70-79.9	85	25.8
80-89.9	35	10.6
90-99.9	7	2.1
Education		
None	31	9.4
Primary school	200	60.6
Middle school	34	10.3
Senior high school / vocational certificate	37	11.2
High vocational certificate	7	2.1
Bachelor degree	11	3.3
Master degree or higher	10	3
Occupation		
Government officer/ retired	26	7.9
Merchant/ business owner	39	11.8
Agriculture	41	12.4
General labor	61	18.5
Other e.g. take care of home, does not work	163	49.4
Monthly income (baht)		
3,000 and less than	187	56.7
3,001-5,000	53	16.1
5,001-10,000	29	8.8
10,001-15,000	22	6.7
15,001-30,000	27	8.2
more than 30,000	12	3.6
Marital status		
Single	20	6.1
Married	223	67.6
Divorce	10	3
Widowed	77	23.3
Living status		
Living condition		
Alone	31	9.4
With spouse	201	60.9
With children	87	26.4
With relative	11	3.3
Living environment		
Owned house	268	81.2
Rent house	17	5.1
Relative's house	45	13.6

Table 1 The characteristics of the 330 older adults participating in this study (cont.)

General data	Number	Percentage
Health status		
Number of disease		
None	131	39.7
1 disease	115	34.8
2 diseases	52	15.8
3 or more than 3 diseases	32	9.7
Health insurance		
Universal coverage	236	71.5
Social insurance	9	2.7
Government	85	25.8
CANE		
Total needs, Mean (SD) 3.09 (3.33)		
Met needs, Mean (SD) 2.67 (3.02)		
Unmet needs, Mean (SD) 0.4 (1.05)		

assessed using the CANE questionnaire. The CANE questionnaire version IV consists of 24 topics of needs; accommodation, household activities, food, self-care, caring for another, daytime activities, memory, communication, mobility/falls, continence, physical health, drugs, psychotic symptoms, psychological distress, information, deliberate self-harm, accidental self-harm, abuse/neglect, behaviour, alcohol, company, intimate relationships, money and benefits [8]. Unmet need is defined as a situation which individual are not receiving the appropriate level of assessment or care. In contrast, the met need means a situation which individual has difficulties in a particular area but the help for the difficulties are being adequately provided by others [8, 11]. The total CANE score is based on the section 1 of each of the 24 problem areas. Count total number of need identified (rate as 1: met need and 2: unmet need) out of maximum 24. Count the total number of met needs (rate as 1) out of maximum 24. Count the total number of unmet needs (rate as 2) out of maximum 24. The rating is made based on all the information gathered throughout the assessment.

Statistical analysis

The descriptive statistics were analyzed to describe the sociodemographic, living status and health related characteristics and the number of needs identified by the participants. The chi-square was used to test the association between the sociodemographic background and the health status, and also used to evaluate the factors associated to the needs determined by the participants. Moreover, multivariable regression analysis was implied for evaluating the relationship between the

sociodemographic, living status, health related factors and the number of needs and the unmet need identification. The multivariable regression analyses were done separately for total number of needs, met need and unmet needs. The multivariable linear regression analysis was used for the total number of need and met need, while the binary variable logistic regression analysis was applied for unmet needs since the data of unmet need were not normal distribution. The SPSS software version 16.0 was used for the data analysis.

Ethical consideration

The research was approved by the Ethical Review Committee for Research Involving Human Research Subjects, Health Science Group, Chulalongkorn University (COA NO. 103/2560).

RESULTS

The characteristics of the 330 elderly participants are shown in Table 1. There were more female participants in this study (60% of total sample). The mean age of the participants was 70.3 years old (SD 7.43). Interestingly, there were almost 10 percent of the older people were living alone. For, living environment, most of elderly participants were living in their owned house. Regarding the health status, more than 60% of the elders had at least one disease and around 10% have three or more diseases.

General data of need, met need and unmet need of study sample

Almost one third of the elderly stated that they did not need any support in these 24 areas of CANE.

Even there were 66.4 % of the participants had at least one met need, only 22.7% of the sample had at least one unmet need. The average need score of the sample was 3.09 per person (SD= 3.33). The mean number of met needs and unmet needs identified were 2.67 (SD=3.02) and 0.4 (SD=1.05) respectively.

The Table 2 shows the frequency of need (divided to met-need and unmet-need) of CANE which were classified to each category. The categories customization was referred from the study of Szczepanska-Gieracha and team [10]. The caring for someone else, self-care and benefit topics contributed the highest percentage of unmet need (based on total need) with the percentage of 40, 31.82 and 30.56 respectively. The area which had the highest percentage of met need was daytime activities (97.37%) and follow by information (95.45%) and company (95%). Although the most frequent identified need was in physical need, the highest proportions of unmet need was found in function category. The items which had the percentage of unmet need more than 20 % were accommodation (26.39%), intimate relationship (25%), self-care (31.32%), caring for someone else (40%) and benefit (30.56%).

Relationship between socio-demographic data, living and health related characteristics and needs (including met need and un-met need)

There were the association of gender, occupation, living condition, living environment, number of disease on the need identification (Table 3). There were more female participants identified that they had at least one needs than male. Regarding the occupation, the elderly who were still working as general labor perceived that they need some support than who were in agricultural field. According to the data related to the living status, it was quite surprising that the elderlies who were living alone mentioned that they needed support less than the other groups, while all of older participants who were living with the relative stated that they had at least one need. The participants who were living in their own houses also need less support than the subjects who rented the house or living with their relative. The increase in the number of disease also had an effect on the perceive of need of the individuals. The participants who had more disease tended to need more care and supports.

The multivariable regression analyses were performed to evaluate the level of needs, met needs and unmet needs (Table 4). The studies were done separately for total number of needs, met need and unmet needs. The multivariable linear regression analysis was used for the total number of need and met need. As the nature of the data was not normal distribution, the log10 of need and met need were used as dependent variables in the linear regression analysis. Only the participants who had at least one needs been counted in this model to evaluate the association between the independent variables and the level of need. The older elderly and having more diseases had a significant association (p -value<0.01) with a higher number of total needs. However, majority of them were met need. The type of insurance also had an association with the number of total need and met-need. The participants who claimed the Civil Servant scheme as their insurance had less need (p -value<0.01) than the elderly who used the universal care coverage.

Regarding the unmet need, the binary variable logistic regression was used to access the determinants of the unmet need. The two variables were created to divide the participants with one or more unmet needs from those without unmet needs. The living environment has a significant effect on unmet needs identification. There were more participants who living in relative's house had at least one unmet needs than the elderly who living in their own houses. The monthly income related to the unmet need as well but in reverse effect. The participants who had higher income had lower unmet need when compare to the elderly who had less income significantly.

DISCUSSION

Sociodemographic and health characteristics of the participants

The ratio of female per male is 6:4. The proportion is quite similar to the proportion of the elderly in Hang Dong district which has the percentage of male as 45% of total population [12]. In addition, the average age of the elderly in Hang Dong district, Chiang Mai province is 70.02 years old [12]. According to the data from the National Health Examination Surveys (NHES) 2014[13], there was 7.9 % of the elderly who live alone, while there is 9.4% of the samples of this study living alone. This issue may cause the lack of carer for the elderly when necessary and in emergency cases.

Table 2 Frequencies of care needs identified using CANE classified into categories [10]

Topic	Description	Needs n (%)	Met needs n (%)^b	Unmet needs n (%)^b
Basic				
Accommodation	Inappropriate, inadequate house, adaption is needed	72 (21.8)	53 (73.61)	19(26.39)
Food	Unable to buy or prepare meals, restricted diet, inappropriate food	75 (22.7)	66(88)	9 (12)
Money	Have difficulty managing money and budget, does not have enough money for essential items or bills	52 (15.8)	47(90.38)	5(9.62)
Social				
Company	Lack of company, frequently feels lonely and isolated	40 (12.1)	38(95)	2 (5)
Intimate relationships	Lack of partner, relative or friend he/she feels close to, dose get on well with them	16 (4.8)	12 (75)	4(25)
Function				
Looking after the home	Limited in looking after home, in need of domestic assistance	74 (22.4)	67 (90.54)	7 (9.46)
Self-care	Difficulty with personal care (washing, dressing, cutting nails)	22 (6.7)	15 (68.18)	7 (31.82)
Caring for someone else	Difficulty with caring for another person	15 (4.5)	9 (60)	6 (40)
Daytime activities	Difficulty with regular, appropriate daytime activities	38 (11.5)	37 (97.37)	1 (2.63)
Physical needs				
Eyesight/hearing/communication	Difficulty with hearing what someone says in a quiet room, difficulty in seeing newsprint or watching television	100 (30.3)	90 (90)	10 (10)
Mobility/falls	Restricted mobility, falls, problems using public transport	74 (22.4)	64 (86.49)	10 (13.51)
Continence	Incontinence, need help with laundry, hygiene and use of aids	34 (10.3)	29 (85.29)	5 (14.71)
Physical health	Has a physical illness that should be treated appropriately	111 (33.6)	105 (94.59)	6 (5.41)
Drugs	Problems with compliance, side effects, drug abuse or dependency, medication not recently reviewed by medical doctor	44 (13.3)	39 (88.64)	5 (11.36)

Table 2 Frequencies of care needs identified using CANE classified into categories [10] (cont.)

Topic	Description	Needs n (%)	Met needs n (%)^b	Unmet needs n (%)^b
Psychological needs				
Memory	Problems with remembering things that happened recently, often forgets where he/she put things	93 (28.2)	80 (86.02)	13 (13.98)
Psychotic symptom	Has psychotic symptom (hear voices, see strange thing, have problem with thoughts)	0 (0)	NA	NA
Psychological distress	Recently felt very sad or fed up, felt very anxious, frightened or worried and need support	48 (14.5)	42 (87.50)	6 (12.50)
Deliberate self-harm	Has thoughts of self-harm or suicide	0 (0)	NA	NA
Health and social care				
Information	Verbal or written information on condition, medication and treatment	44 (13.3)	42 (95.45)	2 (4.55)
Inadvertent self-harm	Accidentally put himself/herself in danger such as leaving gas tap on, leaving the fire unattended, getting lost	32 (9.7)	28 (87.5)	4 (12.5)
Abuse/neglect	Someone has done anything to frighten/ harm/taken advantage of him/her.	0 (0)	NA	NA
Behaviour	Interfering with other affairs, frequently annoying, threatening or disturbing others.	0 (0)	NA	NA
Alcohol	At risk from alcohol misuse, uncontrollable	0 (0)	NA	NA
Benefits	Dose not receive all entitled benefit and need support to get the benefit	36 (10.9)	25 (69.44)	11 (30.56)

^b Percentages are based on the total number of needs in that specific topic

Table 3 The factor associated to the need of elderly

Factor	Need		Chi-square	p-value
	No need	at least 1 need		
Gender			4.554	0.033
Male	50 (37.9%)	82 (62.1%)		
Female	53 (26.8%)	145 (73.2%)		
Age (years)			5.231	0.073
60-69.9	62 (30.5%)	141 (69.5%)		
70-79.9	33 (38.8%)	52 (61.2%)		
80 and more than	8 (19.0%)	34 (81.0%)		
Education			5.348	0.069
Primary level (primary school or less)	70 (30.3%)	161 (69.7%)		
Middle level (Middle school, vocational certificate)	19 (26.8%)	52 (73.2%)		
High level (High vocational certificate, bachelor degree of higher)	14 (50.0%)	14 (50.0%)		
Occupation			21.684	0.000
Government officer/ retired	7 (26.9%)	19 (73.1%)		
Merchant/Business owner	13 (33.3%)	26 (66.7%)		
Agriculture	25 (61.0%)	16 (39.0%)		
General labor	12 (19.7%)	49 (80.3%)		
Other e.g. take care of home, does not work	46 (28.2%)	117 (71.8%)		
Monthly income			4.668	0.097
5,000 and less than	74 (30.7%)	167 (69.3%)		
5,001-15,000	12 (23.5%)	39 (76.5%)		
more than 15,000	17 (44.7%)	21 (55.3%)		
Marital status			2.167	0.338
Single	8 (40%)	12 (60%)		
Married	64 (28.7%)	159 (71.3%)		
Divorce/ Widowed/Separated	31 (35.6%)	56 (64.4%)		
Living condition			19.489	0.000
Alone	19 (61.3%)	12 (38.7%)		
With spouse	62 (30.80%)	139 (69.2%)		
With children/ relative	22 (25.3%)	65 (74.7%)		
With relative	0 (0%)	11 (100%)		
Living environment			8.115	0.017
Owned house	93 (34.7%)	175 (65.3%)		
Rent house	3 (17.6%)	14 (82.4%)		
Relative's house	7 (15.6%)	38 (84.4%)		
Health insurance	15.30%	84.70%		
Universal coverage	89 (37.7%)	147 (62.3%)		
Social insurance	1 (11.1%)	8 (88.9%)		
Government	13 (15.3%)	72 (84.7%)		
Number of disease			17.637	0.001
No disease	50 (38.2%)	81 (61.8%)		
1 disease	42 (36.5%)	73 (63.5%)		
2 diseases	8 (15.4%)	44 (84.6%)		
3 diseases	3 (9.4%)	29 (90.6%)		

Table 4 Multivariable linear regression and logistic regression analyses of sociodemographic, living status and health related characteristics on needs and unmet needs

	Log10 of total needs		Log10 of met needs		Unmet needs	
	B	p-value	B	p-value	OR	(95% CI)
Socio-demographic						
Gender						
Male (ref.)	-	-	-	-	1	
Female	0.047	0.298	0.014	0.247	0.915	(0.483-1.733)
Age (years)						
60-69.9 (ref.)	-	-	-	-	1	
70-79.9	0.073	0.169	0.083	0.823	0.814	(0.384-1.72)
80 and more than	0.238	0.001**	0.260	0.000**	1.122	(0.414-3.042)
Education						
Primary level (ref.)	-	-	-	-	1	
Middle level	0.043	0.389	0.048	0.312	0.556	(0.248-1.244)
High level	-0.165	0.130	-0.108	0.298	0.871	(0.175-4.338)
Occupation						
Other e.g. take care of home, does not work (ref.)	-	-	-	-	1	
Government officer/ retired	0.073	0.501	0.090	0.378	3.759	(0.75-18.854)
Business owner	0.024	0.742	0.034	0.620	1.683	(0.614-4.614)
Agriculture	0.105	0.179	0.094	0.205	0.266	(0.07-1.017)
General labor	-0.088	0.121	-0.094	0.081	1.211	(0.537-2.732)
Monthly income						
5,000 and less than (ref.)	-	-	-	-	1	
5,001-15,000	0.004	0.955	-0.029	0.626	0.506	(0.182-1.409)
more than 15,000	-0.095	0.320	-0.124	0.171	0.203	(0.042-0.974)*
Marital status						
Married (ref)	-	-	-	-	1	
Single	0.120	0.316	0.118	0.303	1.187	(0.216-6.51)
Divorce/ Widowed/Separated	0.134	0.110	0.133	0.096	0.662	(0.179-2.453)

Table 4 Multivariable linear regression and logistic regression analyses of sociodemographic, living status and health related characteristics on needs and unmet needs (cont.)

	Log10 of total needs		Log10 of met needs		Unmet needs	
	B	p-value	B	p-value	OR	(95% CI)
Living status						
Living arrangement						
With spouse (ref.)	-	-	-	-	1	
Alone	-0.159	0.205	0.074	0.535	3.801	(0.755-19.143)
With children	-0.064	0.418	-0.067	0.371	1.153	(0.326-4.076)
With relative	-0.113	0.278	-0.066	0.507	2.603	(0.489-13.854)
Living environment						
Owned house (ref.)	-	-	-	-	1	
Rent house	0.037	0.692	0.041	0.641	2.115	(0.599-7.477)
Relative's house	0.017	0.767	0.059	0.283	2.698	(1.191-6.115)*
Health status						
No. of disease (0-3+)						
0	0.081	0.000**	0.071	0.000**	1.036	(0.761-1.411)
Type of insurance						
Universal coverage (ref.)	-	-	-	-	1	
Social insurance	0.142	0.184	0.125	0.221	1.925	(0.927-3.999)
Government	-0.130	0.009**	-0.103	0.025*	1.036	(0.761-1.411)
R²	0.349		0.324		0.191 ^e	

^eNagelkerkeR²

B: regression coefficients;

OR: Odds ratio

95% CI: 95% confidence interval

* p < 0.05

** p < 0.01

In the income perspective, the median income of the elderly per data from NHES 2014 is 3,000 Thai Baht (THB). It is quite similar to the data from the study indicating that the majority of elderly participants have the income between less than 3,000 and 5,000 THB (78.8%). For the living status, it is mentioned in the NHES that the majority of male elderlies (81.5%) stated that they were the head of the family which mean they were the owner of the house. This information is quite related with the data from this study that majority of the elderlies (81.2%) are living in their own houses. There are 60.3 % of the participants have at least one disease. It is quite similar to the data from NHES which shows that there was about 53.3% of the elderlies has hypertension which is the most common disease in the elderly [13].

Need, met need and unmet need data and association with independent factors

There was limit number of the study which evaluate the need using Camberwell Assessment of Need in the elderly (CANE) to evaluate the need of the elderlies in the community. Most of the studies applied the CANE to evaluate the need of older people in the hospital range from inpatient ward to the primary care health facility. Comparing to the other study using CANE in primary care setting [14] and family home setting [10], the mean number to total need and unmet need were not quite different. There was a bit higher of total need in primary care setting which included older age of elderly [14]. It was also found that there were higher the mean number of needs in the studies conducted in the long-term care setting and the group of elderlies with the complications but the mean number of unmet need of each study was not quite different [9, 15]. While the areas where the high percentage of needs had been identified were quite the same as other studies (e.g. accommodation, looking after at home, food, memory, eyesight/hearing/communication, mobility/falls, and physical health), the majority areas of un-met needs varied from study to study. For example, the high levels of unmet need in primary care setting [14] were identified for mobility, eyesight/hearing, self-care and daytime activities; while, the data from another study evaluating the met and unmet need in primary care but for the specific frail older adults [9] showed the high percentage of unmet need in the areas of company, daytime activities, information and caring for another respectively.

Many of the studies using the Camberwell

Assessment of Need in the Elderly had the main objective to evaluate the difference of the perception of need, met need and unmet need identified by user (elderly), carer and staff. However, this study aimed to evaluate the association of need, met need and unmet need identified by the elderlies and socio-demographic and health-related characteristics. According to the data from this research, the age and number of disease had a strong association with the need and met need. Even the age had no significant relationship on the determination whether the elderly had no need or at least one need, the age had a meaningful association of the number of need identified by the elderly. These results seem straightforward and were the same as the other studies [9, 16].

CONCLUSION

Although the most frequent identified need was in physical area, the highest proportion of unmet need was found in function category. The age and number of diseases had a meaningful association of the number of need identified by the elderly. However, the need which associate with the age and number of disease of the elderly participants is met need. In addition, the study also showed that the types of insurance also had an association with the number of total need and met-need. Regarding unmet needs, the living environment and monthly income seem to have predominant effect on the unmet need. These results suggest that the needs of elderly regarding their functional capacity should be one of the area of concern and need more support from informal and formal authority bodies. The support for the living environment and ability to pay their cost of living might be helpful to relive the issues on the unmet need of the elderly. However, there were also many other factors affecting the need in the elderly, the further researches to evaluate the other factors to cover most aspects and upscale researches are recommended to access the effectiveness of the services provided by government or other service providers.

ACKNOWLEDGEMENT

This research received partial financial support from the Graduate School, Chulalongkorn University.

REFERENCES

1. United Nation [UN]. World population aging report 2015. Geneva: UN; 2015.
2. Institute for Population and Social Research [IPSR].

- Primary report from elderly survey in Thailand. Nakhon Pathom: IPSR; 2014.
3. Momtaz YA, Hamid TA, Ibrahim R. Unmet needs among disabled elderly Malaysians. *Social Science & Medicine*. 2012 Sep; 75(5): 859-63. doi: 10.1016/j.socscimed.2012.03.047
 4. Kane R, Ouslander J, Abrass I, Resnick B. *Essentials of clinical geriatrics*. New York: McGraw-Hill; 2009.
 5. Ohura T, Higashi T, Ishizaki T, Nakayama T. Testing the validity and reliability of a newly developed instrument to assess the subjective needs of institutionalized elderly. *Clinical Gerontologist*. 2015; 38(1): 88-102. doi: 10.1080/07317115.2014.973132
 6. Thailand, Ministry of Social Development and Human Security. *The act on older persons B.E 2546 (2003 A.D)*. Bangkok: Ministry; 2003.
 7. Iliffe S, Lenihan P, Orrell M, Walters K, Drennan V, Tai SS, et al. The development of a short instrument to identify common unmet needs in older people in general practice. *British Journal of General Practice*. 2004 Dec; 54(509): 914-8.
 8. Reynolds T, Thornicroft G, Abas M, Woods B, Hoe J, Leese M, et al. Camberwell Assessment of Need for the Elderly (CANE): development, validity and reliability. *Br J Psychiatry*. 2000 May; 176: 444-52.
 9. Hoogendijk EO, Muntinga ME, van Leeuwen KM, van der Horst HE, Deeg DJ, Frijters DH, et al. Self-perceived met and unmet care needs of frail older adults in primary care. *Arch Gerontol Geriatr*. 2014 Jan-Feb; 58(1): 37-42. doi: 10.1016/j.archger.2013.09.001
 10. Szczepańska-Gieracha J, Mazurek J, Kropinska S, Wieczorowska-Tobis K, Rymaszewska J. Needs assessment of people 75+ living in a nursing home or family home environment. *European Geriatric Medicine*. 2015 Jul; 6(4): 348-53. doi: 10.1016/j.eurger.2015.03.001
 11. Hancock G, Orrell M. *CANE Camberwell assessment of need for the elderly*. London: Gaskell; 2004.
 12. Thailand, Office Statistics Registration System. *Number of Thai population; 2016*. [Available from: http://stat.dopa.go.th/stat/statnew/upstat_age_disp.php
 13. Institute of Health Systems Research [IHSR]. *Thai national health examination survey*. Nonthaburi: IHSR; 2014.
 14. Walters K, Iliffe S, Tai SS, Orrell M. Assessing needs from patient, carer and professional perspectives: the Camberwell Assessment of need for Elderly people in primary care. *Age Ageing*. 2000 Nov; 29(6): 505-10.
 15. Wieczorowska-Tobis K, Talarska D, Kropinska S, Jaracz K, Tobis S, Suwalska A, et al. The Camberwell Assessment of Need for the Elderly questionnaire as a tool for the assessment of needs in elderly individuals living in long-term care institutions. *Arch Gerontol Geriatr*. 2016 Jan-Feb; 62: 163-8. doi: 10.1016/j.archger.2015.10.005
 16. Ronsley PE, Sanmartin C, Quan H, Ravani P, Tonelli M, Manns B, et al. Association between chronic conditions and perceived unmet health care needs. *Open Med*. 2012; 6(2): e48-58.